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(54) Title: **HUMAN SECRETED PROTEINS**

(57) Abstract: The present invention relates to human secreted polypeptides, and isolated nucleic acid molecules encoding said polypeptides, useful for diagnosing and treating immune disorders and diseases. Antibodies that bind these polypeptides are also encompassed by the present invention. Also encompassed by the invention are vectors, host cells, and recombinant and synthetic methods for producing said polynucleotides, polypeptides, and/or antibodies. The invention further encompasses screening methods for identifying agonists and antagonists of polynucleotides and polypeptides of the invention. The present invention further encompasses methods and compositions for inhibiting or enhancing the production and function of the polypeptides of the present invention.

| Gene No. | cDNA Clone ID | ATCC Deposit No.:Z and Date | Vector | NT SEQ ID NO: X | Total NT Seq. | 5' NT of Clone Seq. | 3' NT of Clone Seq. | 5' NT of Start Codon | 5' NT of First AA of Signal Pep | AA SEQ ID NO: Y | First AA of Sig Pep | Last AA of Sig Pep | First AA of Secreted Portion | Last AA of ORF |
|----------|---------------|-----------------------------|-----------------|-----------------|---------------|---------------------|---------------------|----------------------|---------------------------------|-----------------|---------------------|--------------------|------------------------------|----------------|
| 240 | HHPGO40 | 209878 05/18/98 | Uni-ZAP XR | 250 | 1002 | 1 | 1002 | 116 | 116 | 1147 | 1 | 26 | 27 | 295 |
| 240 | HHPGO40 | 209878 05/18/98 | Uni-ZAP XR | 713 | 973 | 1 | 973 | 68 | 68 | 1610 | 1 | 37 | 38 | 302 |
| 240 | HHPGO40 | 209878 05/18/98 | Uni-ZAP XR | 714 | 984 | 1 | 984 | 74 | 74 | 1611 | 1 | 37 | 38 | 224 |
| 241 | HHPTJ65 | 209179 07/24/97 | Uni-ZAP XR | 251 | 515 | 1 | 515 | 247 | 247 | 1148 | 1 | 32 | 33 | 48 |
| 242 | HHSDX28 | 209346 10/09/97 | Uni-ZAP XR | 252 | 1113 | 1 | 1113 | 90 | 90 | 1149 | 1 | 21 | 22 | 56 |
| 243 | HHSGW69 | PTA-855 10/18/99 | Uni-ZAP XR | 253 | 1254 | 1 | 1254 | 238 | 238 | 1150 | 1 | 26 | 27 | 55 |
| 243 | HHSGW69 | PTA-855 10/18/99 | Uni-ZAP XR | 715 | 826 | 1 | 826 | 231 | 231 | 1612 | 1 | 26 | 27 | 55 |
| 243 | HHSGW69 | PTA-855 10/18/99 | Uni-ZAP XR | 716 | 4400 | 1605 | 1674 | | 457 | 1613 | 1 | 1 | 2 | 314 |
| 244 | HHTLF25 | 209125 06/19/97 | ZAP Express | 254 | 697 | 1 | 661 | 142 | 142 | 1151 | 1 | 26 | 27 | 111 |
| 245 | HJABX32 | 209146 07/17/97 | pBluescript SK- | 255 | 1061 | 454 | 1061 | 557 | 557 | 1152 | 1 | 18 | 19 | 51 |
| 246 | HJACA79 | 209368 10/16/97 | pBluescript SK- | 256 | 887 | 1 | 887 | 84 | 84 | 1153 | 1 | 28 | 29 | 68 |
| 247 | HJACG02 | 209215 08/21/97 | pBluescript SK- | 257 | 575 | 1 | 575 | 66 | 66 | 1154 | 1 | 22 | 23 | 108 |
| 247 | HJACG02 | 209215 08/21/97 | pBluescript SK- | 717 | 553 | 1 | 553 | 47 | 47 | 1614 | 1 | 23 | 24 | 108 |

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| 241 | HHPTJ65 | 490904 | 251 | 247 - 393 | 1148 | | | | |
| 242 | HHSDX28 | 553494 | 252 | 90 - 260 | 1149 | | | | |
| 243 | HHSGW69 | 1031514 | 253 | 238 - 405 | 1150 | Met-1 to Cys-12. | 17 | | |
| | HHSGW69 | 853442 | 715 | 231 - 398 | 1612 | Met-1 to Cys-12. | | | |
| | HHSGW69 | 905219 | 716 | 457 - 1398 | 1613 | Tyr-1 to Ser-6, Ala-18 to Gly-38, Pro-56 to Pro-79, Pro-96 to Ala-113, Gln-116 to Gly-128. | | | |
| 244 | HHTLF25 | 461438 | 254 | 142 - 474 | 1151 | Ala-28 to Ser-33, Ala-76 to Lys-111. | 19q13.1 | 164731, 172400, 172400, 180901, 180901, 221770, 248600, 600918, 602716 | |
| 245 | HJABX32 | 487807 | 255 | 557 - 712 | 1152 | Trp-29 to Gly-42, Gly-46 to His-51. | | | |
| 246 | HJACA79 | 562729 | 256 | 84 - 290 | 1153 | | | | |
| 247 | HJACG02 | 1307789 | 257 | 66 - 392 | 1154 | Val-54 to Asp-59. | 19p13.3 | 108725, 120700, 133171, 136836, 145981, 147141, 164953, 188070, 600957, 601238, 601846, 602216, 602477 | |
| | HJACG02 | 509948 | 717 | 47 - 373 | 1614 | Val-54 to Asp-59. | | | |
| 248 | HJACG30 | 895505 | 258 | 291 - 425 | 1155 | Thr-26 to Asn-39. | 15.X | | |
| | HJACG30 | 821341 | 718 | 50 - 439 | 1615 | Pro-57 to Pro-64. | | | |
| | HJACG30 | 774300 | 719 | 350 - 715 | 1616 | Lys-1 to Gly-8. | | | |
| 249 | HJBAY55 | 823510 | 259 | 238 - 414 | 1156 | Lys-47 to Pro-58. | 5q34 | 109690, 109690, 123101, 180071, 600584 | |
| 250 | HJBCU04 | 877643 | 260 | 96 - 626 | 1157 | Met-1 to Cys-7, Gln-45 to Gly-61, Gln-77 to Thr-93, Arg-113 to Arg-118, Ser-135 to Glu-147, Gln-155 to Ala-161. | 9p13-p12 | 230400, 250250 | |
| 251 | HJMBI18 | 545492 | 261 | 574 - 816 | 1158 | Thr-26 to Met-33. | 12q24.11 | 160781, 181405 | |
| 252 | HJMBN89 | 565675 | 262 | 348 - 518 | 1159 | | 14q32.33 | 144120, 147020, 147110 | |
| 253 | HJMBT65 | 596795 | 263 | 341 - 469 | 1160 | Thr-36 to Leu-41. | 8p11.2-p11.1 | 136350, 152760, 180100, 182900, 277700, 600617 | |
| 254 | HJMBW30 | 491209 | 264 | 110 - 238 | 1161 | Pro-30 to Ala-35. | | | |

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|-----|---------|--------|-----|---|
| | | | | <p>H0749:5, H0012:5, H0090:5, H0494:5, H0529:5, L0805:5, H0436:5, L0758:5, L0601:5, S0114:4, S0134:4, H0486:4, H0083:4, H0268:4, S0440:4, H0641:4, L0761:4, L0776:4, L0663:4, H0539:4, H0518:4, L0439:4, L0751:4, L0750:4, S0212:3, H0638:3, S0418:3, S0356:3, H0370:3, H0052:3, H0271:3, S0003:3, H0039:3, H0617:3, S0144:3, S0422:3, S0002:3, L0770:3, L0769:3, L0771:3, L0648:3, H0520:3, S0027:3, L0747:3, L0777:3, L0757:3, H0667:3, H0136:3, H0422:3, H0352:3, H0583:2, H0657:2, H0663:2, S0408:2, L0717:2, H0549:2, H0013:2, H0599:2, H0575:2, H0581:2, T0010:2, H0266:2, H0622:2, H0598:2, H0135:2, H0551:2, H0100:2, T0042:2, H0625:2, H0509:2, H0646:2, L0641:2, L0649:2, L0806:2, L0659:2, L0518:2, L0665:2, S0374:2, H0547:2, H0555:2, L0740:2, L0588:2, L0603:2, H0423:2, S0424:2, H0506:2, H0624:1, T0002:1, H0140:1, H0295:1, H0341:1, H0484:1, H0255:1, H0125:1, S0420:1, S0444:1, H0580:1, S0045:1, H0747:1, H0351:1, H0550:1, H0415:1, L0468:1, H0249:1, H0592:1, H0559:1, L0622:1, H0250:1, H0427:1, H0002:1, H0706:1, H0004:1, H0253:1, H0318:1, H0421:1, H0251:1, H0545:1, H0457:1, T0003:1, H0024:1, S0388:1, S0051:1, S0024:1, H0594:1, H0687:1, H0028:1, L0483:1, H0553:1, H0644:1, H0628:1, H0673:1, H0708:1, S0366:1, H0040:1, H0063:1, H0087:1, H0264:1, H0412:1, H0059:1, T0069:1, H0560:1, H0561:1, S0344:1, H0538:1, S0426:1, L3158:1, L0763:1, L0772:1, L0374:1, L0764:1, L0773:1, L0767:1, L0774:1, L0655:1, L0657:1, L0515:1, L0634:1, L0783:1, L0789:1, L0790:1, L0666:1, L0664:1, L2262:1, H0144:1, H0702:1, H0519:1, S0126:1, H0689:1, H0690:1, H0435:1, H0666:1, S0328:1, H0522:1, H0696:1, S0144:1, S0028:1, L0741:1, L0744:1, L0749:1, L0756:1, L0779:1, L0755:1, S0260:1, H0445:1, S0434:1, H0665:1, S0242:1, S0276:1, H0543:1 and S0412:1.</p> |
| | HHSGW69 | 853442 | 715 | |
| | HHSGW69 | 905219 | 716 | |
| 244 | HHTLF25 | 461438 | 254 | <p>AR251:168, AR248:141, AR249:139, AR265:60, AR253:50, AR263:41, AR244:32, AR096:32, AR268:26, AR264:24, AR290:20, AR246:18, AR240:17, AR177:16, AR267:14, AR183:14, AR270:13, AR229:13, AR184:12, AR269:10, AR274:9, AR194:8, AR175:8, AR316:7, AR247:7, AR202:7, AR313:7, AR234:7, AR055:6, AR299:6, AR033:6, AR180:6, AR198:6, AR271:6, AR182:6, AR238:6, AR206:5, AR190:5, AR205:5, AR188:5, AR275:5, AR272:5, AR061:5, AR196:5, AR284:5, AR241:5, AR273:5, AR173:5, AR189:5, AR203:5, AR199:5, AR237:5, AR179:4, AR039:4, AR200:4, AR172:4, AR191:4, AR298:4, AR192:4, AR181:4, AR291:4, AR104:4, AR289:4, AR176:4, AR224:4, AR292:4, AR186:3, AR282:3, AR226:3, AR174:3, AR300:3, AR165:3, AR161:3, AR162:3, AR266:3, AR285:3, AR163:3, AR164:3, AR231:3, AR185:3, AR052:3, AR215:3, AR295:3, AR212:3, AR243:3, AR309:3, AR221:3, AR166:3, AR169:3, AR296:3, AR232:2, AR053:2, AR223:2, AR225:2, AR089:2, AR277:2, AR233:2, AR213:2, AR308:2, AR286:2, AR256:2, AR257:2, AR283:2, AR310:2, AR235:2, AR217:2, AR227:2, AR204:2, AR288:2, AR195:2, AR281:2, AR293:1, AR312:1, AR214:1, AR261:1, AR294:1, AR236:1, AR216:1, AR193:1, AR259:1, AR230:1 S0144:10, L0775:10, S0278:6, H0638:5, H0580:5, H0641:5, L0438:5, H0521:5, H0740:4, H0392:4, H0522:4, L0747:4, S0408:3, H0749:3, H0441:3, H0438:3, S0388:3, S0428:3,</p> |

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| 245 | HJABX32 | 487807 | 255 | <p>H0658:3, H0402:2, S0358:2, S0444:2, S0140:2, H0747:2, H0086:2, S0142:2, L0520:2, L0763:2, L0770:2, L0772:2, L0771:2, L0774:2, L0776:2, L0526:2, L0743:2, L0439:2, L0751:2, L0754:2, L0756:2, L0605:2, S0116:1, H0662:1, S0360:1, L3646:1, H0637:1, S0045:1, S0222:1, S0614:1, H0455:1, H0592:1, H0250:1, H0069:1, H0575:1, T0082:1, H0036:1, H0581:1, H0457:1, S0050:1, S0051:1, H0399:1, H0354:1, H0594:1, H0247:1, H0271:1, L0055:1, S0036:1, S0038:1, S0438:1, H0646:1, L0769:1, L0764:1, L0375:1, L0787:1, S0053:1, S0374:1, H0682:1, H0648:1, H0710:1, S0152:1, H0727:1, L0744:1, L0755:1, L0731:1, L0758:1, L0599:1, L0603:1, H0423:1 and H0352:1.</p> <p>AR060:16, AR055:15, AR271:11, AR282:10, AR104:10, AR089:9, AR283:9, AR299:8, AR253:7, AR185:7, AR039:6, AR096:6, AR316:6, AR300:6, AR193:6, AR176:6, AR235:5, AR198:5, AR213:5, AR221:5, AR197:5, AR243:5, AR178:4, AR218:4, AR269:4, AR291:4, AR224:4, AR196:4, AR275:4, AR277:4, AR245:4, AR266:4, AR172:4, AR053:4, AR313:4, AR309:4, AR228:4, AR192:4, AR225:4, AR168:4, AR264:4, AR270:4, AR169:3, AR162:3, AR165:3, AR222:3, AR164:3, AR177:3, AR166:3, AR250:3, AR204:3, AR161:3, AR240:3, AR207:3, AR183:3, AR246:3, AR229:3, AR182:3, AR033:3, AR268:3, AR261:3, AR267:3, AR195:3, AR201:3, AR175:3, AR272:3, AR254:3, AR247:3, AR238:3, AR289:3, AR233:3, AR179:3, AR242:3, AR295:3, AR180:3, AR163:2, AR296:2, AR230:2, AR288:2, AR274:2, AR226:2, AR231:2, AR219:2, AR294:2, AR239:2, AR255:2, AR297:2, AR293:2, AR212:2, AR236:2, AR232:2, AR234:2, AR237:2, AR290:2, AR173:2, AR227:2, AR287:2, AR181:2, AR205:2, AR191:2, AR214:2, AR217:2, AR061:2, AR171:2, AR257:2, AR200:2, AR189:2, AR311:2, AR216:2, AR188:2, AR256:1, AR199:1, AR286:1, AR190:1, AR174:1, AR252:1, AR170:1, AR211:1, AR260:1, L0157:3, L0748:2, L0731:2, H0656:1, L0005:1, S0408:1, H0729:1, S0278:1, H0261:1, L3653:1, H0101:1, H0052:1, L0471:1, H0024:1, H0424:1, H0213:1, T0041:1, H0647:1, L0769:1, L0363:1, L0774:1, L0806:1, L0805:1, L0776:1, L0807:1, L0657:1, H0519:1, S0406:1, H0627:1 and L0744:1.</p> |
| 246 | HJACA79 | 562729 | 256 | <p>AR313:30, AR165:21, AR166:19, AR161:19, AR162:19, AR164:19, AR163:19, AR089:17, AR173:16, AR242:15, AR300:14, AR096:13, AR247:12, AR192:12, AR229:12, AR299:11, AR204:10, AR178:10, AR197:10, AR180:10, AR312:10, AR240:10, AR177:9, AR175:9, AR174:9, AR264:9, AR183:9, AR053:9, AR176:8, AR226:8, AR270:8, AR234:8, AR179:8, AR238:8, AR181:8, AR185:8, AR309:8, AR233:8, AR257:8, AR196:8, AR268:7, AR212:7, AR193:7, AR182:7, AR316:7, AR274:7, AR195:7, AR269:7, AR198:7, AR060:7, AR213:7, AR039:7, AR275:6, AR245:6, AR231:6, AR207:6, AR191:6, AR250:6, AR169:6, AR201:6, AR237:6, AR243:6, AR104:5, AR272:5, AR271:5, AR239:5, AR277:5, AR258:5, AR199:5, AR230:5, AR308:5, AR267:5, AR236:5, AR228:5, AR263:5, AR203:5, AR266:5, AR200:4, AR033:4, AR282:4, AR262:4, AR189:4, AR227:4, AR246:4, AR188:4, AR261:4, AR205:4, AR218:3, AR254:3, AR283:3, AR055:3, AR235:3, AR311:3, AR232:3, AR061:3, AR172:3, AR171:2, AR190:2, AR255:2, AR214:2, AR219:2, AR297:2, AR221:2, AR256:2, AR293:2, AR260:2, AR290:2, AR225:2, AR289:2, AR285:2, AR294:2, AR286:1, AR291:1, AR296:1, AR217:1, AR253:1, AR252:1, H0580:1.</p> |

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| 243 | HHSGW69 | 1150 | Production of IL-10 and downregulation of immune responses | <p>Eur J Immunol 29(12):3914-3924 (1999); Zheng and Flavell, Cell 89(4):587-596 (1997); and Henderson et al., Mol Cell Biol 14(6):4286-4294 (1994), the contents of each of which are herein incorporated by reference in its entirety. Mast cells that may be used according to these assays are publicly available (e.g., through the ATCC). Exemplary human mast cells that may be used according to these assays include the HMC-1 cell line, which is an immature human mast cell line established from the peripheral blood of a patient with mast cell leukemia, and exhibits many characteristics of immature mast cells.</p> <p>IL-10 FMAAT. Assays for immunomodulatory proteins produced by activated T cells, B cells, and monocytes that exhibit anti-inflammatory activity and downregulate monocyte/macrophage function and expression of cytokines are well known in the art and may be used or routinely modified to assess the ability of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, and modulate immune cell function and cytokine production. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-10, and the downmodulation of immune responses. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Koning et al., Cytokine 9(6):427-436 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.</p> |
| 244 | HHTLF25 | 1151 | Production of IL-10 and downregulation of immune responses | <p>IL-10 FMAAT. Assays for immunomodulatory proteins produced by activated T cells, B cells, and monocytes that exhibit anti-inflammatory activity and downregulate monocyte/macrophage function and expression of cytokines are well known in the art and may be used or routinely modified to assess the ability of the polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, regulate inflammatory activities, and modulate immune cell function and cytokine production. Exemplary assays that test for immunomodulatory proteins evaluate the production of cytokines, such as IL-10, and the downmodulation of immune responses. Such assays that may be used or routinely modified to test immunomodulatory activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include the assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204 (1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); and Koning et al., Cytokine 9(6):427-436 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human T cells that may be used</p> |

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| 245 | HJABX32 | 1152 | Production of IL-10 and activation of T-cells. | <p>according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human T cells are primary human lymphocytes that mature in the thymus and express a T cell receptor and CD3, CD4, or CD8. These cells mediate humoral or cell-mediated immunity and may be preactivated to enhance responsiveness to immunomodulatory factors.</p> <p>Assays for production of IL-10 and activation of T-cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to stimulate or inhibit production of IL-10 and/or activation of T-cells. Exemplary assays that may be used or routinely modified to assess the ability of polypeptides and antibodies of the invention (including agonists or antagonists of the invention) to modulate IL-10 production and/or T-cell proliferation include, for example, assays such as disclosed and/or cited in: Robinson, DS, et al., "Th-2 cytokines in allergic disease" Br Med Bull; 56 (4): 956-968 (2000), and Cohn, et al., "T-helper type 2 cell-directed therapy for asthma" Pharmacology & Therapeutics; 88: 187-196 (2000); the contents of each of which are herein incorporated by reference in their entirety. Exemplary cells that may be used according to these assays include Th2 cells. IL10 secreted from Th2 cells may be measured as a marker of Th2 cell activation. Th2 cells are a class of T cells that secrete IL4, IL10, IL13, IL5 and IL6. Factors that induce differentiation and activation of Th2 cells play a major role in the initiation and pathogenesis of allergy and asthma. Primary T helper 2 cells are generated via in vitro culture under Th2 polarizing conditions using peripheral blood lymphocytes isolated from cord blood.</p> |
| 246 | HJACA79 | 1153 | Production of MCP-1 | <p>MCP-1 F/MAT. Assays for immunomodulatory proteins that are produced by a large variety of cells and act to induce chemotaxis and activation of monocytes and T cells are well known in the art and may be used or routinely modified to assess the ability of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) to mediate immunomodulation, induce chemotaxis, and modulate immune cell activation. Exemplary assays that test for immunomodulatory proteins evaluate the production of cell surface markers, such as monocyte chemoattractant protein (MCP), and the activation of monocytes and T cells. Such assays that may be used or routinely modified to test immunomodulatory and differentiation activity of polypeptides of the invention (including antibodies and agonists or antagonists of the invention) include assays disclosed in Miraglia et al., J Biomolecular Screening 4:193-204(1999); Rowland et al., "Lymphocytes: a practical approach" Chapter 6:138-160 (2000); Sathaporn and Eremin, J R Coll Surg Ednb 45(1):9-19 (2001); and Verhasselt et al., J Immunol 158:2919-2925 (1997), the contents of each of which are herein incorporated by reference in its entirety. Human dendritic cells that may be used according to these assays may be isolated using techniques disclosed herein or otherwise known in the art. Human dendritic cells are antigen presenting cells in suspension culture, which, when activated by antigen and/or cytokines, initiate and upregulate T cell</p> |

| | | | | sapiens] | 8.1 AAH008 28 | | | |
|-------------|---------|-----|----------------|--|------------------|--------------------|------------------|-------------------|
| HHFPU04 | 535730 | 708 | WUblastx.64 | (Q9BQB6) UNKNOWN (PROTEIN FOR MGC:11276) (PROTEIN FOR IMAGE:3455200). | Q9BQB6 | 72% 83% 100% | 326 217 45 | 424 339 218 |
| HHFEC49 | 905849 | 241 | WUblastx.64 | (Q9D1N2) 1110002J19RIK PROTEIN. | Q9D1N2 | 56% | 180 | 500 |
| HHFGR93 | 865581 | 242 | WUblastx.64 | (Q96AP7) Hypothetical 41.2 kDa protein. | Q96AP7 | 100% | 132 | 1301 |
| HHFGR93 | 691402 | 709 | HMMER 2.1.1 | PFAM: Immunoglobulin domain | PF00047 | 36.3 | 628 | 807 |
| | | | WUblastx.64 | (Q96AP7) Hypothetical 41.2 kDa protein. | Q96AP7 | 98% 99% | 819 130 | 1298 828 |
| HHFHR32 | 411470 | 244 | WUblastx.64 | (Q99LX9) SIMILAR TO SINGLE-STRANDED-DNA- BINDING PROTEIN. | Q99LX9 | 100% | 1 | 762 |
| HHFOJ29 | 1127491 | 245 | WUblastx.64 | (Q9H7P4) FLJ00024 PROTEIN (FRAGMENT). | Q9H7P4 | 99% | 592 | 65 |
| HHGCM76 | 662329 | 246 | WUblastx.64 | (Q96FV2) Unknown (protein for IMAGE:3945715) (Fragment). | Q96FV2 | 94% 98% | 7 378 | 114 536 |
| HHGCM76 | 383547 | 712 | WUblastx.64 | (Q96FV2) Unknown (protein for IMAGE:3945715) (Fragment). | Q96FV2 | 94% 98% | 7 378 | 114 536 |
| HHGDW4 3 | 554613 | 248 | WUblastx.64 | (Q9PIJ1) PRO1546. | Q9PIJ1 | 59% 52% | 707 774 | 787 887 |
| HHPGO40 | 1299927 | 250 | WUblastx.64 | (Q9HBW1) Brain tumor associated protein NAG14. | Q9HBW1 | 74% 30% | 191 338 | 976 928 |
| HHPGO40 | 753270 | 713 | HMMER 2.1.1 | PFAM: Leucine Rich Repeat | PF00560 | 122 | 542 | 613 |
| | | | WUblastx.64 | (Q9HBW1) Brain tumor associated protein NAG14. | Q9HBW1 | 74% 30% | 191 338 | 967 928 |
| HHPGO40 | 560969 | 714 | HMMER 2.1.1 | PFAM: Leucine Rich Repeat | PF00560 | 77 | 548 | 619 |
| HHSGW69 | 1031514 | 253 | WUblastx.64 | (O95325) PROTEASOME SUBUNIT P58. | O95325 | 100% 94% | 730 529 | 780 582 |
| HHTLF25 | 461438 | 254 | WUblastx.64 | (Q9UMT3) KILLER ACTIVATING RECEPTOR ASSOCIATED PROTEIN, ISOFORM B. | Q9UMT3 | 91% | 142 | 474 |
| HJABX32 | 487807 | 255 | WUblastx.64 | (Q70277) RING FINGER PROTEIN. | O70277 | 98% | 463 | 612 |

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|---------|-----|--------|---------|----------|--|
| | | | | | AF111847.1, AL442072.1, AL117435.1, AL122121.1, AK000445.1, AK000083.1, AK026592.1, AK026855.1, AB062938.1, AK026452.1, AL359615.1, AL080137.1, AK000652.1, AL122093.1, AK026533.1, AL137557.1, AF207829.1, AK026784.1, AK025092.1, AL136799.1, AL050138.1, AL389982.1, AK026959.1, AB063008.1, AL049314.1, AL133557.1, AL359601.1, AK026927.1, BC006195.1, AK027113.1, AB060912.1, AK027868.1, AB056768.1, AL133093.1, BC006807.1, AL512746.1, AK026534.1, AL096744.1, AB051158.1, AK026532.1, AK025209.1, AL133560.1, AF125948.1, AL133565.1, BC008070.1, AB060826.1, AK026542.1, AK026353.1, AL117583.1, AB060863.1, AL080124.1, AL136768.1, AL117394.1, AK000432.1, AK026608.1, X82434.1, AK027164.1, AK026583.1, AB048954.1, AK025491.1, AB055368.1, AL137283.1, AB047904.1, BC001045.1, AB052191.1, AL136928.1, AF219137.1, AF260566.1, AL353940.1, BC008899.1, AK000618.1, AB060825.1, AL049466.1, AK025772.1, AB055315.1, AL049464.1, AL122123.1, BC002733.1, AL136786.1, AB056421.1, AF091084.1, AB060852.1, BC004556.1, AK027116.1, AK026947.1, BC008485.1, BC007199.1, AL512684.1, AK000212.1, AL049283.1, AL512689.1, AK000614.1, AF097996.1, Z82022.1, AL137271.1, AK025967.1, BC002839.1, AF177336.1, U91329.1, AK026086.1, AK025391.1, AB050510.1, AK000323.1, AL049300.1, AK049382.1, AF183393.1, AK026528.1, AB056809.1, AK027204.1, AL049430.1, AK000647.1, AL137538.1, AL122110.1, AK025484.1, BC008983.1, BC008280.1, AK024524.1, AL512761.1, X72889.1, AK025524.1, AL136843.1, AL133113.1, X65873.1, AB052200.1, AL137648.1, U80742.1, AK026651.1, AK000718.1, AB055374.1, AL162062.1, BC008382.1, AK025906.1, AL359583.1, AK025632.1, AL137463.1, BC006412.1, AL110197.1, AL359622.1, BC006164.1, AB060883.1, AF271350.1, BC008893.1, AK026526.1, BC001349.1, AC019095, AC019095. AA481924, BF343628, A1276798, BE858514, BF915546, BG058647, BF917552, A1299346, N41026, BF914451, AA989053, W60864, BF915075, A1423526, BF106006, A1289858, AA746220, BF915128, A1306602, AW015647, AA633118, A1207255, BF913974, A1301688, W92376, A1139176, AA971275, AA480109, H12338, BF912934, AA865668, BF901361, F30553, AW975896, AA991168, A1302882, BF915115, AA729941, AA627378, AA865651, AW607348, H39980, AA729534, T55959, T57206, AW607175, W60940, BE155729, A1880682, AW383808, BG058709, AW383055, AW383057, BE154544, AW383016, AW383047, AW383871, AW383051, BF901355, AW383000, A1919456, BE154555, AW383784, BF914191, F32872, A1017727, AA974881, BE154538, AW383009, BF092099, A1243983, AA991170, R49835, R49793, AA318120, BF893642, W74783, AW382999, A1712713, AW579628, AW382994, H12392, AW372144, AW372157, AW383836, T52100, AW372154, AW383822, AW383837, AW579627, AW383817, AW372166, BF881098, AW382997, D20493, AW372161, AW383865, AA918360, N47127, AW579992, AA937670, AW579601, AW579998, AU076484, A1245273, BF831159, AA664094, AA878598. |
| HHTLF25 | 254 | 461438 | 1 - 683 | 15 - 697 | |

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|---------|-----|--------|----------|-----------|---|
| HJABX32 | 255 | 487807 | 1 - 1047 | 15 - 1061 | AA865673, AI807718, AA937805, BF350664, AI525220, AD000833.1, AF019563.1, AF019562.1, AJ010098.1, AD000864.1, X78928.1, AF072845.1, BE385796, AL048522, AI14843, AV723581, AA114842, AA565480, AA310353, D80486, D60174, BF953264, D60503, D59975, BF950356, BF950358, D60175, AW612691, AI972034, BE677654, D81110, AI017365, N71311, AA248844, AW953422, D80968, D60623, H22225, AI439412, N71362, C15057, AA907114, BF953271, AI783844, AI086417, BE254805, AI088382, AI813642, AI971901, AI122053.1, AF220022.1, AF220021.1, AF045239.1. |
| HJACA79 | 256 | 562729 | 1 - 873 | 15 - 887 | BE348441, BE644740, AI912665, AA310811, AW504485, AV763026, AV763058, AW502796, AW500029, BE207631, AI732151, AL079734, AV711465, AW327624, AI357823, AA469327, N42040, AW970877, BF681619, AU152561, AW148507, AI040051, AW302909, AI188390, AI654285, AV759632, AW855803, AW855730, AI753113, AW190505, AV760918, AI755202, AI066646, AV758097, AA573033, BF751949, AL042756, AA602557, AA491960, BE062476, BE062478, AW769151, AA613624, AI037897, AI171941, AW571499, AI753037, AI366902, AA809546, AL048135, AA877992, AW468003, AL047879, AL119438, AL120959, AW274072, AC068799.14, AC009087.4, AC003041.1, AC006441.13, AC005874.3, AF134471.1, AC005701.1, AL049820.23, AP001717.1, AL049715.25, AC022392.4, AL034549.19, AC006165.1, AC005971.5, Z85986.1, AL138960.16, AC008569.6, AC007052.4, AL035690.10, AC012627.4, AC002531.1, AC008897.7, AC011500.7, AC019205.4, AJ229041.1, AC005520.2, AL162615.13, AC006285.11, AP000512.1, AC005377.2, AB023051.1, AF053356.1, AC012476.8, AL354808.24, AC005255.1, AC007899.3, AC004859.2, AL136308.4, AL118502.38, AC008733.7, AC011464.5, AC025166.7, AL109827.8, AL133211.9, AC018809.4, AL034418.5, AL391684.6, AL138885.21, AL353812.13, AC004929.2, AL356257.14, AC007374.6, AC007956.5, AL109627.18, AC019206.4, AL139321.28, AL096791.12, AL391114.12, AC090958.1, AC005829.1, AL451125.7, AC005077.5, AC018758.2, AF168787.1, AC00360.35, AC006111.3, AL136295.3, AL161672.13, AL121890.34, AC009144.5, AC007679.4, AC006116.1, AL121989.12, AP000246.1, AC073316.6, AC080012.20, AL133355.12, AC083871.2, AC053467.1, AC007318.4, AC079383.17, AL163279.2, AC006511.5, AL080243.21, AC006077.1, AL391259.15, AC004983.2, AL139100.9, AC006001.2, AL049646.19, AP003357.2, AC011443.6, AC003962.1, AC011479.6, AC011448.3, AC008753.8, AC008440.8, AC008687.4, AC009331.5, AC015987.5, AC010149.8, AC079754.4, AL356299.16, AL117692.5, AC008750.7, AC018635.6, AP001710.1, AC009073.8, AL136173.24, AP001432.1, AC003982.1, AC004894.1, AC005682.2, AF064861.1, AC008962.8, AC008507.8, AC004417.1, AL109947.19, AC009570.13, AF111167.2, AC008745.6, AL359091.10, AL445483.13, AC005399.19, AP002392.3, AC010422.7, AL157791.4, AC005000.2, AF134726.1, AL022329.9, AC006312.8, AC012368.6, AL034380.26, AC003957.1, AC010203.13, AC015968.4, AL022156.2, AC017070.9, |